

REMARKS:

Claims 1-12 and 15-19 are in the case and presented for consideration.

Claims 1-11 and 15-19 have been rejected under 35 U.S.C. 112, first and second paragraphs, for the limitation in claim 1 calling for "said seal portion being removable," which has been objected to as containing new matter and as being confusing.

The specification a page 32, line 20 to page 33, line 2 (paragraph [0072]) explains that the air or gas openings, shown for example at 18 in Fig. 10, are created in this embodiment of the invention, by starting with the electrolyte film (which forms the seal portions 8) covering the porous fuel electrode substrate 2, than scraping off the electrolyte film to create the openings. This manner of formation of the openings creates a structural limitation in that it is a structurally different combination of substrate/seal/openings than would be created otherwise.

Claim 1 and its dependent claims are therefore believed to be in proper form and without new matter.

Claims 1 and 12 have also been amended to better explain that it is the porosity of the first electrode member consisting of a porous substrate without through-passages, through which the fuel gas or air passes. In other words, the structure of the porosity permits the passage of gas/air and not the required presence of through-passages as in US Patent 4,476,196 to Poeppel. There is clearly support for the through-passage-free nature of the monolithic substrate 2 in the present application since a reading of the entire application as filed makes it clear that the porosity of the substrate is being relied upon to allow the gas/air to pass, and no passages that extend in or through the substrate. Further this is structurally a different type of porosity than Poeppel which requires through-

passages 13 and 14 and which further explains that its porosity is of the type which allow the fuel and air to electrochemically combine (column 8, line 48-53).

Returning to the Final Action, Claims 1-8, 11-12, 14, 17 and 19 are rejected as being anticipated by U.S. Patent 4,476,196 to Poeppel, et al. (Poeppel).

Poeppel teaches using only certain structures within the fuel cell core as the pathways for carrying fuel and oxidant gases across the core (see Poeppel, column 4, lines 7-9), rather than employing the entire body of the electrode layer as passages for fuel gas or air. According to Poeppel, the fuel or oxidant can only enter and leave the fuel cell core through certain defined passageways. See Poeppel, column 6, lines 28-31, indicating that the fuel/air distributing chambers, or manifolds 18 and 19, located on either side of the fuel cell core, “communicate with one another via passageways 13 formed in the core 11.” See also, Fig. 2 of Poeppel.

Poeppel requires through-passages and the claimed invention precludes them.

Poeppel also does not use the entire side surface areas of its electrode as a gas/air passage and opening as in the claimed invention, since the through-passages 13 and 14 eliminate much of these areas which are replaced with the needed large gas/air inlet/outlet openings of the passages 13 and 14 in Poeppel.

Poeppel also does not teach or suggest scraping way a seal layer to expose the side surfaces of the first electrode member to form the inlet/outlet openings into the through-passage-free porous substrate as in claim 1.

Accordingly claims 1-8, 11-12, 14, 17 and 19 are believed to be patentable over Poeppel.

Claims 9, 15, 16 and 18 are also rejected as being obvious under 35 U.S.C. 103(a) from Poeppel in view of US Patent 6,045,935 to Ketcham and claim 10 is rejected as being obvious from Poeppel and Ketcham in view of Morgan Advanced Ceramics Datasheet for Glass Ceramic (Morgan).

The dependent claims further limit the invention and the secondary references are insufficient to alter the teaching of Poeppel to the extent that through-passages are taught and are needed, and that the type of porosity of the electrode body in Poeppel is for causing the reaction and is not sufficient for the passage of fuel gas or air, so that structurally this is a different type of porosity than the type claimed in claims 1 and 12.

Accordingly all of the claims are believed to be distinguished over the prior art and, by this amendment, the application and claims are believed to be in condition for allowance.

If any issues remain, the Examiner is respectfully invited to contact the undersigned at the telephone number below.

Respectfully submitted,

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